USSR   UDC 621.9.048.3

VERKHOTUROV, A. D., and MURZIN, L. M., Institute of Problems of Materials
Science, Academy of Science Ukrainian SSR

"Mechanism of Electrical Erosion of Composites During Electric-Spark Alloying"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 73, pp 94-99

Abstract: One of the prospective methods of applying coatings to metal
parts, to increase hardness, wear resistance, chemical stability, etc., is
electric-spark alloying where the anode material is transferred to the sur-
face being alloyed and the process can be viewed from a technological stand-
point as a coefficient of transfer: $K = \frac{c}{ae} \cdot 100\%$ where c is cathode
gain in weight in cm^3 [sic] and ae is anode erosion, cm^3. The coefficient
of transfer of pure carbides lies in the limits of 6-8% and such a low
coefficient is not effective when using transition metal carbides; there-
fore, the effect of soft binders in transition metal carbides was studied
as to their effectiveness in electri-spark alloying. Carbides ZrC and NbC
were studied with binders of Fe, Co, and Ni and a content ranging from 0 to
100%. Graphs of the relationship of K to binder content showed that a K of
1/2

USSR

VERKHOTUROV, A. D., and MURSIN, L. M., et al., Poroshkovaya Metallurgiya,
No 8, Aug 73, pp 94-99

90% is achieved for all the binders with NbC at a content of about 20 vol %
as opposed to ZrC in which the 90% level is not reached until about 35 vol %
binder. Anode erosion is less in the case of NbC with all binders than ZrC.
When the binder content is over the amount stated above for K = 90%, the
deformation capability of the composite and its resistance to brittle
failure are increased but its overall strength is reduced. Once the surface
layer has reached a significant thickness, cracks begin to develop and
propagate, which in turn leads to a lowering of the overall strength of the
composite. Total anode erosion is the sum of the amount of substance
removed in the liquid, gas, and solid states. Four figures, fourteen
bibliographic references.

KIPNIS, A. YA., MUKAVIN, K. A., and NEMOYTIN, N. A., Gipronicel'

"Investigation of Carbonyl Nickel Powders by the Electron Microscopic Method"

Abstract: Carbonyl nickel powders obtained by different methods and differing in their macroscopic characteristics were used in this study. Five samples measuring less than 2 microns or between 2 and 3 microns were examined by electron microscopic methods. Examination of these particles showed a range in particles size from several angstroms to several hundred angstroms. The relation of the macroscopic properties of the powders to the cumulative size of the primary particles, and probably, also to the form of the aggregate could be established from the data. The relation of specific surface and bulk density to the primary particle size was shown.

The size of the primary particles and the nature of the aggregates are dependent on the methods of powder production. Higher velocities usually corresponded to smaller sizes and more porous aggregates of primary particles. On standing at room temperature, primary particles of carbonyl nickel powders spontaneously undergo transformation to micron-size particles. Macroscopic properties and particle size composition of carbonyl nickel powders can be
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USSR

KIPNIS, A. YA., et al., Poroshkovaya Metallurgiya, No 4(100), Aor 71, pp 8-12

used to determine the size of the primary particles and the nature of the aggregates.

2/2

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USSR

UDC: 530.182:537.226.1

MURZIN, S. N., OSIPOV, B. D.

"Change in the Static Permittivity of a Gas in a Strong Resonance Field"

Leningrad, Optika i Spektroskopiya, Vol. 32, No 2, Feb 72, pp 430-432

Abstract: The authors investigate the change in static permittivity of ammonia in the case of saturation of the strong lines of the inversion spectrum (transitions $J,K = 3,3; 2,2; 1,1$). It was found that the dependence of this change on the frequency of the external field is close to the form of the absorption line and that the magnitude of the observed effect is of the same order as predicted by calculations. Two figures, bibliography of three titles.

1/1

USSR   UDC: 621.372.41

AL'TSHULLER, G. B., PARFENOV, B. G., MURZIN, V. I.

"On the Effectiveness of Linear Thermal Compensation of AT Section Quartz
Resonators"

Translation: The paper deals with the feasibility of using linear thermal
compensation of AT section quartz resonators. Formulas are presented for
calculating the parameters of the compensating elements, and experimental
data are given. Resumé.

1/1

- 40 -

USSR

VAVILOV, V. S., GUZEYeV, N. V., ZAYaTs, V. A., KONONENKO, V. L., MANDEL'ShTAM, T. S., and MURZIN, V. N.

"The Spectra of Photo Excitation of Free Excitons by Submillimeter Radiation in 'Ultra Pure' Germanium"

Abstract: Recent experiments have been successful in the study of characteristics of excitons in the long-wave infrared band. Absorption in the region of 2 - 5 Mev was observed in 1971. Subsequent experiments with a backwards wave tube recorded absorption by free excitons in germanium of a triplet with a maximum at 3.42 Mev. In both cases the germanium had residual impurities of $10^{12} - 10^{13} cm^{-3}$, which does not completely exclude possible impurity effects. The authors have made tests at impurity levels no greater than $5 \cdot 10^{10} cm^{-3}$ with a backward wave tube at 340 - 455 and 510 - 730 micrometers, as well as with a diffraction spectrometer at the far infrared region of 60 - 700 micrometers. The experiments were at 1.5 - 4.2 degrees K.
1/1

USSR

VAVILOV, V. S., et al., Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, Vol 17, No 9, 5 May 73, pp 480 - 483

Results indicate that the binding energy of the exciton in the ground state
is 3.7 Mev and that the distance between the lowest two states is 0.7 Mev,
a result which agrees fairly well with theoretical predictions and with measure-
ments in the interzonal transition region. The narrowness of the absorption lines
measured indicates that kinetic energy of the excitons does not sub-
stantially contribute to broadening these lines. The broadness is apparently
related to interactions between the excitons and null oscillations of the crystal
lattice.

1/2

- 24 -

Infrared Rays

`USSR`

DEMESHINA, A.I., MURZIN, V.N., UMAROV, L.M. [Institute Of Physics imeni P.N. Lebedev, AS, USSR, Moscow]

"Longwave Infrared Absorption Spectra Of n-Type Indium Antimonide"

Abstract: Measurements are made of the absorption spectra of pure crystals of n-InSb (in disks 9-mm in diameter and 0.08-3.5--mm thick) with $N_D - N_A \approx 5.10^{13}$ cm^{-1} in the far-infrared region of the spectrum of 50-2000 micrometer at a temperature of 1.6--3.5° K in various magnetic fields with an intensity up to 40 kilogram force. It is shown that in the majority of crystals, the absorption increases with a decrease of frequency approximately as $(\hbar\omega)^{-3.1}$, starting with an energy of 4-7 Mev, and in the interval of the spectrum investigated the electronic transition from the zone of the impurity states into the InSb is determined. Two regions with different absorption mechanisms were located as a result of the measurements. In the region $h\nu \geq 4$ Mev, spectra of cyclotron absorption were observed, connected with transitions among the different Landau levels of free and impurity electrons. In the longest wave part of the infrared spectra absorption bands were observed, resulting from transients between the principal and excited states of the fine donor impurities in the InSb within the limits of the system of sublevels of the Landau lower levels. In the crystals investigated separation of the zone of impurity states from the conduction band
1/2

was observed in the magnetic fields H $\geq$ 10 kilogram force. The authors thank B.M. Vul and V.S. Vavilov for their interest in the work and V.V. Buzdin for his assistance during the measurements. 4 fig. 20 ref. Received by the editors, 9 Feb 71; in finished rewording, 27 May 71.

2/2

1/2   019   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--FAR INFRARED ABSORPTION IN N GERMANIUM CAUSED BY IMPURITY
  INTERACTION -U-
AUTHOR-(04)-DEMESHINA, A.I., KORCHAZHKINA, R.L., KUZNETSOVA, N.N., MURZIN,
  V.N.
COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 428-30

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--IR IRADIATION, ABSORPTION, GERMANIUM SEMICONDUCTOR,
  SPECTROSCOPIC ANALYSIS, PHOSPHORUS, GALLIUM, ELECTRON SHELL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0571   STEP NO--UR/0449/70/004/002/0428/0430

CIRC ACCESSION NO--AP0105556
                        UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0105556

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FAR IR SPECTROSCOPY WAS USED TO STUDY THE INITIAL STAGES OF THE INTERACTION OF FINE DONOR IMPURITIES IN GE AT LOW CONCNS. WHEN THE ELECTRON SHELLS OF ONLY THE CLOSEST IMPURITY ATOMS OVERLAP. SAMPLES OF GE, DOPED WITH P AND COMPENSATED WITH GA HAVING DEGREES OF COMPENSATION 0.05-0.5 WERE USED. THE DATA FOR SAMPLES CONTG. THE SAME CONCN. OF P BUT DIFFERENT DEGREES OF COMPENSATION SHOWED GOOD AGREEMENT WITH THEORETICAL RESULTS. FOR SAMPLES WITH COMPENSATION 0.45, WHICH FALLS OUTSIDE THE LIMITS OF APPLICABILITY, THE VALUE OF THE ABSORPTION COEFF. PER UNIT OF COMPENSATION INCREASES AS THE CONCN. OF THE DONOR IMPURITY INCREASES IN AGREEMENT WITH THE MAIN CONCLUSIONS OF THE THEORY. THE DIFFERENCE WHICH IS OBSD. IS ATTRIBUTED TO THE POSSIBLE NARROWING OF THE ABSORPTION BAND AND A SHIFT OF ITS MAX. TO SHORTER WAVELENGTHS.

UNCLASSIFIED

USSR

UDC 621.314.632

ZYUBIN, V.F., MURZIN, YU.M.

"Microelectronics In Control Systems Of Rectifier Converters"

Translation: The paper considers problems of the construction of the control systems of thyristorized converters using the discrete principles of the computing arts with the application of integrated circuits, using the control system of a 3-phase bridge circuit as an example. The control voltage is converted into a code and is recorded in a digital delay unit. The latter converts the recorded number into a time interval between the synchronizing pulses being produced by the zero organs and the output pulse of the delay unit which is fed to the register. The register carries out a distribution of the pulses from the thyristors which are previously amplified by an amplifier. The feedback unit converts the output parameter of the power part into code which is introduced into the digital delay unit. The principal requirements imposed on the integrated circuit used in the control system are presented. 6 ill. 7 ref.

1/1

USSR

MAKSIMENKOV, A. V. and MURZIN, YU. M.

UDC   621.396.6-181.48

"Discrimination of a Two-Dimensional Representation of a Connection Graph in the Design of Integrated Circuits"

Translation: The authors study the sequence-parallel method for laying out the connections of integrated circuits with the aid of a digital computer. The proposed method for laying out printed connections is based on the algorithm for constructing contraction circuits and on finding the optimal path between two subsets in a graph along with being based on the parallel algorithm for laying out connections. A series of effective procedures is proposed for improving the performance of the parallel layout algorithm. Using probability theory, it is shown that the proposed algorithm for discriminating a two-dimensional representation of a connection graph provides much better solution quality than any sequence type algorithm. Recommendations are given on the use of the sequence-parallel algorithm for laying out printed connections.   Resume.

1/1

USSR

UDC   621.396.8-...

MURZIN, YU. M., BOBKOV, N. YE., and BACHMANOV, V. A.

"Some Problems Associated With the Control and Search for Failures in Integrated Circuits"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collection of Scientific Works on Problems in Microelectronics. M oscow Institute of Electronics Technology), 1972, vyp. 10, pp 8-13 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 V222)

Translation: A general evaluation is given of methods for the control of micro-circuits. A detailed study is made of the theoretical basis of the failure search method based on control results. Probability of method error is evaluated. Original article: one illustration and two bibliographic entries.   N.S.

1/1

USSR

UDC: 621.396.6-181.5

MAKSIMENKOV, A. V., MURZIN, Yu. M.

"Series-Parallel Methods of Tracing LSI Connections"

Sb. nauchn. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn.
(Collected Scientific Works on Problems of Microelectronics. Moscow
Institute of Electronic Technology), 1971, vyp. 6, pp 92-104 (from RZh-
Radiotekhnika, No 12, Dec 71, Abstract No 12V384)

Translation: Two algorithms are presented for laying out the connections
in large-scale integrated circuits with a multilayered orthogonal system
of metallization. The combined use of series and parallel methods enables
use of the proposed algorithms for laying out LSI circuits with 500-1 200
connections. The entire set of connections is broken down into a number
of subsets, the configurations of each of these subsets being distributed
into a minimum number of layers by means of the parallel algorithm. The
proposed layout methods minimize the lengths of all connections.

1/1

USSR

UDC 541.183

KIROVSKAYA, I. A., MAYDANOVSKAYA, L. G., KNYAZEVA, E. I.,
MURZINA, G. D., NAGOVITSINA, V. N., Tomsk State University imeni
V. V. Kuybyshev, Tomsk, Ministry of Higher and Secondary Specialized
Education RSFSR

"Adsorption of CO on Semiconductors of the Zinc Blend Type"

Abstract: A study is reported on the adsorption of carbon monoxide
on semiconductors of the isoelectronic series of germanium: Ge,
GaAs, ZnSe, and CuBr. Kinetics of the adsorption on all of these
compounds was studied as well as the desorption kinetics of CuBr.
Heats of adsorption of CO were calculated for several temperatures
by the Clayperone-Clausius equation of the Bering-Sperpinski type,
using empirical functions determined by the authors. A relation-
ship was found between the chemosorptive activity and the width of
forbidden zone ΔU of the above semiconductors: with the increase
of ΔU the heat of adsorption is decreased, the temperature of the
beginning of activated adsorption is increased as is the energy of
1/2

USSR

KIROVSKAYA, I. A., et al, Zhurnal Fizicheskoy Khimii, Vol 44, No 5, May 70, pp 1260-1266

activation. Relative adsorption coefficients were determined for several temperatures. An assumption was made that the adsorption of CO occurs on one of the lattice atoms of given semiconductors forming surface structures of the type of linear structure carbonyls. In the case of binary compounds the active center becomes the atom which is included in the lattice in the form of a negatively charged ion.

2/2

USSR

UDC 669.28

FREZE, N. I., BIRYUKOVA, T. A., and MIEZINOV, N. A.

"Feautes of Melting Alloys of the Mo-C-Ni System"

Moscow, Tsvetnyye Metally, No 7, Jul 72, pp 81-83

Abstract: The purpose of this work was to study the effect of melting method on the loss and distribution of nickel in the cross section of ingots of alloy TSM-3 (0.01-0.10% Ni, 0.05-0.10% C, balance Mo). The cold brittleness temperature of the cast metal was also studied. Ingots were melted in an electron-beam furnace and in vacuum-arc furnaces operating on d-c and a-c current. For electron-beam melting an 80-mm-diameter crystallizer was used. A 110-mm-diameter crystallizer was used for electric-arc melting. In the process of electron-beam melting of the electrodes, a large nickel loss resulting from vaporization and segregation throughout the ingot was observed. Use of electrodes made of alloyed nickel and carbon pellets made it possible not only to reduce nickel loss during melting but also to significantly improve the uniformity of nickel distribution. Arc melting in a "dry" crystallizer using d-c current led to an extremely nonuniform distribution of nickel in the cross section of the ingot caused by condensation of the vaporizing nickel on the crystallizer walls, enriching the surface layers. When a-c current was used
1/2

USSR

FREZE, N. I., etal, Tsvetnyye Metally, No 7, Jul 72, pp 81-83

for arc melting, very little nickel segregates, owing to the constant infusion of the molten ingot.

Ingots obtained from a single electric-arc remelt exhibited an almost complete absence of nickel segregation. The nickel loss here amounted to 80-85%, but the high concentration content of oxygen in the electrode increased the oxygen content in the ingots (up to 0.007%). The use of combined electrodes (unalloyed pellets of high-purity Mo and Mo pellets alloyed with carbon as well as nickel plate) helped to lower the content of gas impurities. Cold brittleness of alloy TSM-3 was determined from the change in bend angle in which the temperature of transition from ductile to brittle was taken as the minimum temperature at which samples could be bent 90°. The alloy produced by electron-beam melting had the lowest cold brittleness temperature, while the alloy produced by single electric-arc remelting had the highest transition temperature. It was established that the higher the rate of crystallization, the higher the degree of solid solution saturation by interstitial elements and the higher the cold brittleness temperature. 3 figures, 1 bibliographic reference.

2/2

1/2   010

UNCLASSIFIED

TITLE—DESUBLIMATION OF MALEIC ANHYDRIDE FROM CONVERTER (E.I.T.) GASES FROM FURFURAL OXIDATION -U-

PROCESSING DATE—30OCT70

AUTHOR-(05)-MUSA, Z., LIYEPINA, R., SHIMANSKAYA, M.V., ZILE, J., HILLERS, S.

COUNTRY OF INFO—USSR

SOURCE—LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (2), 175-81

DATE PUBLISHED————70

SUBJECT AREAS—CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS—MALEIC ANHYDRIDE, FURFURAL, CATALYTIC OXIDATION, INDUSTRIAL BYPRODUCT

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—1999/1866

STEP NO—UR/0464/70/000/002/0175/0181

CIRC ACCESSION NO—AP0123654

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DESUBLIMATION OF MALEIC
ANHYDRIDE (I) FROM CONVERTER GASES FROM CATALYTIC VAPOR P HASE OXIDN. OF
FURFURAL WAS STUDIED. EFFECT OF TEMP. AND AIR ADMIXTS. WAS STUDIED,
OPTIMAL CONDITIONS OF DESUBLIMATION WERE DETD. AND EFFICIENCY OF THE
DILN.   OF THE CONVERTER GASES BY COLD AIR WAS ESTD.   FACILITY:
INST. ORG. SIN., RIGA, USSR.

UNCLASSIFIED

1/2   010

UNCLASSIFIED

TITLE--DEHYDRATION OF MALEIC ACID. III. PERIODIC DEHYDRATION ON EXPERIMENTAL APPARATUS -U-

PROCESSING DATE--23OCT70

AUTHOR-(04)-MUSA, Z., HILLERS, S., LIYEPINA, R., SHIMANSKAYA, M.V.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSRZINAT. AKAD. VESTIS, KIM. SER. 1970, (2), 182-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DEHYDRATION, MALEIC ACID, CATALYTIC OXIDATION, FURFURAL, DISTILLATION, CHEMICAL LABORATORY APPARATUS, CHEMICAL PRODUCT PRODUCTION, CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1865

STEP NO--UR/0464/70/000/002/0182/0186

CIRC ACCESSION NO--AP0123653

UNCLASSIFIED

CIRC ACCESSION NO--AP0123653

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERIODIC DEHYDRATION OF MALEIC
ACID (I) SOLNS., PRODUCED BY CATALYTIC OXIDN. OF FURFURAL, BY AZEOTROPIC
DISTN. WITH XYLENE WAS STUDIED. THE PRESENCE OF RESINS IN THE
CATALYZATES DECREASED THE POWER OF THE DEHYDRATION PROCESS BOTH BY
DECREASE OF THE LOAD AND INCREASE OF TIME NEEDED. UNDER INDUSTRIAL
CONDITIONS, CATALYZATES EITHER REFINED FREE OF RESINS OR OBTAINED BY USE
OF HIGHLY PRODUCTIVE CATALYSTS AND CONTG. LOW AMTS. RESINS SHOULD BE
USED.

UNCLASSIFIED

USSR

MUSABAEV, I. K. (Editor)   UDC 911.3.616.9

"Problems of Major Infectious Diseases"

Nauchn. tr. uchenykh i prakt. vrachey Uzbekistana, sb. 6 (Scientific Works of Scientists and Practicing Physicians in Uzbekistan, Collection 6). Tashkent, "Meditsina," 1970, 301 pp (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.234)

Translation: The collection presents the most current research on the biological properties of the agents of intestinal bacteria, pathogenesis (including metabolism), clinical syndromes and treatment of typhoid and paratyphoid, dysentery, infectious hepatitis, and other enteroviral diseases.

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USSR   UDC: 616.981.42-036.22(575

DZHALILOV, K.D., DZHURAYEV, N.D., MUSABAYEV, I.K., YUSUPOV, K.YU., and PULATOV,
YA.G., Uzbek Institute of Epidemiology, Microbiology, and Infectious Diseases,
and Uzbek Republic Sanitary Epidemiological Station and Infectious Diseases,

"Aspects of the Epidemiology of Brucellosis in Uzbekistan"

Abstract: Although the incidence of brucellosis has declined sharply in
recent years in the Soviet Union as a whole, it remains high in the Central
Asian republics, particularly Uzbekistan, mainly because cattle and sheep
raising is widespread in both the public and private sectors. From 1962-1966
cattle were the source of the disease in man in 60.6% of the cases, sheep
and goats in 32.5%, and other animals in 6.9%. The main routes of infection
were alimentary (30.9%), contact (16.2%), and combined alimentary-contact
(9.9%). The peak of the disease occurred during the spring and summer,
when contacts of people with animals (lambing, shearing of wool) were most
frequent, and consumption of dairy and milk products highest. Farms affected
with the disease in 1966 were in Kashkadar'ya oblast (15.8%), Samarkand (14.2%),
Tashkent oblast (12.3%), Karakalpak ASSR (12%), Surkhandar'ya (11.4%), Andizhan
(10.7%) and Fergan (8.7%) oblasts. Among humans, more cases of chronic bru-
cellosis than acute forms of the disease are reported every year.
1/1

Acc. Nr: AP0043938

SOME PROBLEMS OF EPIDEMIOLOGY OF BRUCELLOSIS
IN UZBEKISTAN

Dzhalilov, K. D.; Dzhurayev, N. D.; Musabayev, I. K.;
Yusupov, K. Yu.; Pulatov, Ya. G.

As a result of analysis of the incidence of brucellosis and of individual problems of
epidemiology and epizootology concerning brucellosis in Uzbekistan in 1956—1966, it was
established that the index of brucellosis affection of farm animals was unequally distributed
in the republic: in 1962—1966 83.7% of the affected animals were found in Samarkand, Bu-
khara, Kashkadarya, and Tashkent regions, and also Karakalpak ASSR and Tashkent city,
only 11.3% being revealed in Surkhandarya, Khoresm, Fergana and Syrdarya regions.
A spring-summer seasonal prevalence was noted (80%). It was shown that brucellosis
infection of human beings occurs mainly by alimentary route, cattle serving as the source
of infection.

REEL/FRAME
19770364

USSR

KOLMOGOROV, G. D., MUSABEKOV, T. YU.   UDC 621.382,002-50.001.57:519.2

"Some Problems of Mathematical Simulation and Statistics as Applied to the Problem of Controlling the Technological Production Processes of Semiconductor Devices (Survey)"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Engineering. Scientific and Technical Collection. Semiconductor Devices), 1971, vyp. 4 (61), pp 17-30 (from RZh--Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A610)

Translation: A study was made of the basic mathematical methods of statistical processing of data on the states of a large system for a technological process. The general algorithm for finding and implementing the optimal mode for the technological process is written. An heuristic criterion is proposed for calculating the "corrected" values of the initial and control parameters of processes. There are 2 illustrations, 3 tables, and a 23-entry bibliography.

1/1

1/2   013
UNCLASSIFIED
TITLE--EFFECT OF THE POSITION OF AKLYL GROUPS ON THE RATE OF
BUTYLNAPHTHALENE OXIDATION -U-
PROCESSING DATE--09OCT70

AUTHOR-(02)-VORONENKOV, V.V., MUSABEKOV, YU.S.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(1), 64-7

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXIDATION RATE, NAPHTHALENE, CONJUGATE BOND SYSTEM, STERIC
HINDRANCE, UV ABSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1885

STEP NO--UR/0204/70/010/001/0064/0067

CIRC ACCESSION NO--AP0112865

UNCLASSIFIED

2/2   013
CIRC ACCESSION NO--AP0112865   UNCLASSIFIED
                                                          PROCESSING DATE--09OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RATE OF OXIDN. OF ALPHA (I) AND
BETA,BUTYLNAPHTHALENES (II) WAS STUDIED IN A CLOSED SYSTEM AT
110DEGREES. THE CONSIDERABLY LOWER RATE OF OXIDN. OF I WAS EXPLAINED BY
STERIC INHIBITION BY THE SIGMA, PI CONJUGATION OF THE OXIDIZED ALPHA CH
BOND CAUSED BY AN OVERLAP OF VAN DER WAALS SPHERES OF THE ME GROUP WITH
THAT OF THE PERI PROTON OF THE NAPHTHALENE NUCLEUS. EXISTENCE OF THE
STERIC HINDRANCE OF THE SIGMA, PI CONJUGATION WAS FURTHER PROVED BY
LOWER VALUES OF MOLAR REFRACTION AND INTENSITY OF UV ABSORPTION IN LONG
WAVE REGION IN THE CASE OF I.   FACILITY: YAROSLAV. TEKHNOL.
INST., YAROSLAVL, USSR.

UNCLASSIFIED

USSR

UDC 15.541.64.661.723 - 16.678.743

ASAMOV, M. K., MUSAKHANOVA, S. M., and TKACHENKO, A. A., Tashkent Order of the Red Banner of Labor State University imeni V. I. Lenin

"Radiation Grafting of Vinylidene Fluoride on Polyvinyl Chloride From a Liquid Phase in Presence of 1,1-Dichloroethane"

Abstract: Vinylidene fluoride was grafted from a liquid phase onto poly-vinylchloride by the radiation method in presence of 1,1-dichloroethane. It was established that the polymerization rate is directly proportional to the dose strength. Grafting vinylidene fluoride onto polyvinyl chloride improves fire retardant properties of the grafted copolymers, making them also resistant to organic solvents.

1/1

USSR

UDC 661.183.123

PLACHENOV, T. G., GUR'YANOV, V. V., SEVRYUGOV, L. B., and MUSAKIN, G. A.

"Porous Structure and Molecular-Sieve Properties of Activated Hydrocarbon Adsorbents From Industrial Furyl Resin FL-2

Leningrad, Zhurnal Prikladnoy Khimii, Vol 44, No 11, Nov 71, pp 2498-2503

Abstract: Conditions prevailing during activation of carbon obtained by carbonization of thermosetting furyl resin, using optimal quantity of an acid catalyst, were studied in respect to their effect on the porous structure and adsorptive properties of the material. Carbon activation was performed by CO_2 in a stationary phase at temperatures of 700-850°. It has been shown that such activation up to 40% charring leads to development of microporous structure only, producing adsorbents with high dynamic activity towards benzene vapors. Lowering the activation temperature results in a more uniform development of the microporous structure due to predominant opening of the pore volumes of the molecular dimensions of the starting charcoal. Hydrocarbon adsorbents activated with CO_2 to low charring at temperatures up to 800° show highly selective molecular sieve properties.

1/1

USSR

MUSANOV, S. V.

UDC: 629.78.018.3

"Studying the Flow of a Viscous Gas With Slipping in a Channel"

Translation: Skimmers are used in experimental units for modeling motion in the upper layers of the atmosphere. These are air intake type units with each cut to study part of a jet. Their geometry should ensure a shockless flow into a channel, i.e. the skimmer should start. Nevertheless, the range of the numbers M and Re, the range in which the skimmer has to be used, along with the phenomena of viscosity and rarefaction become very important. The boundary layer formed on the walls of the skimmer can "close" it off. The internal generating lines of skimmers, which ensure their starting, are calculated for the case of the given viscous flows from the sources. As the result of the numerical solution of an inverse problem for a boundary layer equation, while taking into consideration the effect of the lateral curvature and slipping, along with the temperature discontinuity at the flow to body boundary, the displacement thickness is determined which is identified with the physical dimensions of the viscous zone of flow. Original article: six illustrations and 11 bibliographic entries. Resume.

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USSR

MUSANOV, S. V.

"Study of the Flow of a Viscous Gas with Slipping in a Channel"

Uch. zap. Tsentr. Aero-gidrodinam. In-ta [Scientific Writings of Central Aero-Hydrodynamic Institute], Vol 2, No 5, 1971, pp 26-34, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 B196 by V. S. Galkin).

Translation: The internal generating skimmers starting fixed hypersonic non-viscous flows from sources are calculated. This is done by numerical solution of the planar and axisymmetrical reverse problem for boundary layer equations considering the influence of transverse curvature, slipping and the temperature jump on the wall with various values of the temperature factor (degree of cooling of wall in comparison with the stagnation temperature). The internal generatrix of the skimmer is determined from the extraction thickness δ^*: the calculated value of δ^* is laid out from a fixed flow line of the nonviscous flow along a perpendicular, and the boundary produced is accepted as a generatrix. It is assumed that the leading edges $(x = 0)$ of the desired bodies are sharp. The boundary conditions of slipping "liquidate" the singularity at point $x = 0$; as a result, where $x = 0$, the viscous zone is absent $(\delta^* = 0)$ and the initial conditions become $v = 0$, $u = u_c$, $h = h_c$, where v, u and h are the normal and tangential components of velocity and enthalpy,

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USSR

MUSANOV, S. V., Uch. zap. Tsentr. Aero-gidrodinam. In-ta., Vol 2, No 5, 1971, pp 26-34.

$( )_e$ is the value at the edge of the boundary layer with nonviscous flow. The remaining boundary conditions are the usual. The boundary layer equations in Lis-Mangler variables are solved by the method of finite differences. The results of calculation are presented for various values of Reynolds number, Mach number 10, Prandtl number 1, ratio of specific heat capacities 1:4 and linear dependence of viscosity factor on temperature. A detailed analysis is presented of the results of calculation; in particular, a sharp reduction of $\delta*$ is noted due to slipping, transverse curvature and cooling of the wall.

2/2

UNCLASSIFIED

TITLE--SHAPE CF THE POTENTIAL BARRIER IN AN ALUMINUM, ALUMINUM OXIDE AND
   GOLD FILM SYSTEM -U-
AUTHOR--MUSATOV, A.L., TSYETAYEV, S.K.

COUNTRY CF INFC--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1), 298-301

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, ELECTRCNICS ANC ELECTRICAL ENGR.

TCPIC TAGS--ALUMINUM, ALUMINA, GOLD, THIN FILM SEMICONDUCTCR, DIELECTRIC
   PROPERTY, MEASUREMENT

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/2020

CIRC ACCESSION NO--APOC48298

STEP NO--UR/C181/70/012/001/0298/03C1

UNCLASSIFIED

94356g Shape of the potential barrier in an aluminum–aluminum oxide–gold film system. Musatov, A. L.; Tsvetaev, S. K. (Inst. Radiotekh. Elektron. Moscow, USSR). *Fiz. Tverd. Tela* 1970, 12(1), 298–301 (Russ). The dielec. system $Al-Al_2O_3-Au$ 170 Å thick was investigated. The spectral characteristics of the photocurrent in Fowler coordinates $[\sqrt{I_\phi} = f(h\nu)]$ close to the long-wavelength boundary is always linear, which allows one to det. the height of the potential barrier (ϕ) on the $Al-Al_2O_3$ boundary from the point of intersection of the spectral characteristic with the abscissa. Far from the long-wavelength boundary, the spectral characteristic has a break. The voltage dependence of ϕ at the $Al-Al_2O_3$ boundary is given.   A. Libackyj

I 13

REEL/FRAME
19792020

MUSATOV, A. S., and BOBKOVA, O. S.

"Thermal Losses in the Silicothermal Method of Production of Ferrochrome Outside the Furnace"

Translation: On the basis of theoretical calculation, a quantitative estimate is given for the primary sources of thermal losses in the process of production of carbon-free ferrochrome by the method of mixing of liquid melts. The heat losses involved in the primary technological operations are determined. It is demonstrated that the greatest heat losses in the technology of production of carbon-free ferrochrome, with average values of other parameters, are produced by waiting in ladles of ore-lime melt after it is extracted from the furnace.
       The data presented allow calculation of the quantity of solid additives consisting of ore-lime mixture or ferrochrome wastes. 1 table; 6 biblio. refs.

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023

UNCLASSIFIED

TITLE--REACTION OF ANIMAL SKIN TO REPEATED ATTACHMENT AND FEEDING OF IXODID TICKS, IXODOIDEA, IXODIDAE -U-

AUTHOR--MUSATOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--PARAZITOLOGIYA, 1970, NR 1, PP 66-69

DATE PUBLISHED------70

PROCESSING DATE--04DEC70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TICK, DIET, BLOOD, ANTIGEN ANTIBODY REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1658

CIRC ACCESSION NO--AP0136919

STEP NO--UR/9057/70/000/001/0066/0069

UNCLASSIFIED

CIRC ACCESSION NO--AP0136919
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEX OF FACTORS AFFECTING
THE HOST DURING TICK FEEDING INCLUDES THE ANTIGENIC PROPERTIES OF TICK
SALIVA, WHICH CAUSE IMMUNOLOGICAL REARRANGEMENTS IN HOST TISSUES.
REPEATED FEEDING OF TICKS ON HOST ANIMALS IS ACCOMPANIED BY COMPLICATED
REACTIVE CHANGES OF BOTH A GENERAL AND LOCAL CHARACTER. RHIPICEPHALUS
BURSA, HYALOMMA PLUMBEUM AND H. ASIATICUM TICKS WERE FED ON SHEEP, WITH
FIVE TO SIX WEEK INTERVALS BETWEEN FEEDINGS, EACH TIME AT A NEW SITE.
REACTIONS OF THE FIRST TYPE, INNATE REACTIONS, WERE SIMILAR TO REACTIONS
TO FEEDING OF OTHER BLOOD SUCKING INSECTS AND DID NOT CHANGE WITH THE
NUMBER OF FEEDINGS. REACTIONS OF THE SECOND TYPE, WHICH ARE SPECIFIC
AND ACQUIRED, INCLUDED PRODUCTION OF SPECIFIC ANTIBODIES.   ALLERGIC
PHENOMENA WERE ALSO NOTED. SALIVA INJECTED DURING REPEATED FEEDINGS IS
IN AN ANTIGEN ANTIBODY RELATIONSHIP WITH SENSITIZED TISSUES.
FACILITY: KAFEDRA ZOOLOGII, VELIKOLUKSKOGO SEL'KHOZ INSTITUTA.

UDC 595.421

USSR

MUSATOV, V. A., Chair of Zoology, Velikiye Luki Agricultural Institute

"Reaction of Animal Skin to Repeated Attachment and Feeding of Ixodid Ticks (Ixodoidea, Ixodidae)

Leningrad, Parasitologiya, No 1, 1970, pp 66-69

Abstract: Several factors operating on the animal host during the initial feeding of ticks results in sensitization of the host's tissues and elaboration of specific antibodies. The antigenic effect of the saliva of subsequent series of ticks gives rise to reactive changes, both general and local. Both types of reactions are pathological, especially at the site of contact of the saliva with the animal's tissues. The pathological changes that take place in the skin are unfavorable for the parasites, impairing feeding conditions and affecting the qualitative composition of their food. Unable to obtain standard food and in adequate quantities, the ticks (especially the females) are unable to grow and develop normally.

1/1

USSR   UDC 547.861.07

YELINA, A. S., MUSATOVA, I. S., and SYROVA, G. P.

"Pyrazines and Their N-oxides. III. Synthesis and Properties of N-oxides of
2 and 2,3-substituted Pyrazines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1275-1280

Abstract: The synthesis of N-oxides of 2 and 2,3-substituted pyrazines is
described. Under the effect of alkaline reagents, the synthesized di-N-
-oxide of pyrazine-2-carbaldehyde in which the aldehyde group is in the
hydrate form, undergoes oxidation-reduction leading to deoxidation of one
of the nitrogen atoms of the ring and oxidation of the dihydroxymethyl group
to a carboxyl group. In connection with the high antitubercular activity in
vitro of the di-N-oxides of unsubstituted and N-substituted amides of
quinoxaline-2-carboxylic acid, the corresponding derivatives in the pyrazine
series were synthesized and their biological activity was studied. Para-
magnetic resonance and infrared spectral data are also given.

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UDC 547.863.1'781'861.07

USSR

YELINA, A. S., MUSATOVA, I. S., TSYRUL'NIKOVA, L. G., All-Union Scientific
Research Chemical-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"N-Oxides of Imidazo[4,5-b]quinoxalines and Imidazo[4,5-b]pyrazines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1266-1270

Abstract: The synthesis of mono and di-N-oxides of methyl derivatives of
imidazo-[4,5-b]quinoxaline and imidazo[4,5-b]pyrazine is described. High
reactivity of the 20methyl group in N-oxides of 20methylimidazo[4,5-b]-
-quinoxaline was found by comparison with the corresponding unoxidized
derivative. No noticeable antibacterial activity was detected. Experimental
precedures and results are presented for the synthesis of 4-N-oxide of 2-
-methylimidazo[4,5-b]quinoxaline (II) and 4,9-di-N-oxide of 2-methylimidazo
[4,5-b]quinoxaline (III), the conversion of II and III into the 4-N-oxide
of 3-amino-2-hydroxyquinoxaline (IV) and 1,4-di-N-oxide of 2-amino-3-hydr-
oxyquinoxaline (V), the N-oxidation of 2-methylimidazo[4,5-b]pyrazine (VIa),
N-oxidation of 5,6-dimethylimidazo[4,5-b]pyrazine (VIb), the synthesis of
1-benzyl-5,6-dimethylimidazo[4,5-b]pyrazine (IX), mono-N-oxide of 1-benzyl-
-5,6-dimethylimidazo[4,5-b]pyrazine (X), 4-N-oxide of 2-styrylimidazo

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USSR

YELINA, A. S., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 9,
1972, pp 1266-1270

/4,5-b/quinoxaline (XI), 4,9-di-N-oxide of 2-styrylimidazo/4,5-b/quinoxaline
(XII), 2-(o-hydroxystyryl)imidazo/4,5-b/quinoxaline (XVII), 4-N-oxide of
2-(o-hydroxystyryl)imidazo/4,5-b/quinoxaline (XVIII), the oxidation of com-
pounds I and II by selenium dioxide, deoxidation of the styryls XIII and XI
by potassium manganate, the reaction of 2,3-diaminoquinoxaline with dimethyl-
formamide and the synthesis of 2-methylimidazo/4,5-b/quinoxaline.

2/2

Ref. Code: UR 0246

THE CLINICAL PICTURE AND MORPHOLOGY OF THE OPTICOMYELITIS SYNDROME IN ACUTE DISSEMINATED ENCEPHALOMYELITIS

Lyudkovskaya, I. G., Musatova, I. M.

The authors studied 15 patients with acute dessiminated encephalomyelitis, where in 5 cases there was a combination of an affection of the optical nerves and the spinal cord. The report contains a detailed case history with histological data of the CNS where the duration of the process was 2.5 years. The authors come to the conclusion that opticomyelitis in these cases is a syndrome of disseminated encephalomyelitis.

REEL/FRAME

19671925

UDC 614.23:614.3

USSR

MUSAYELYAN, A. V., Kurday Rayon Sanitary Epidemiological Station

"Work Load and Organization of the Work Time of a Sanitary Physician"

Moscow, Gigiyena i Sanitariya, No 10, 1971, pp 103-104

Abstract: In 1951 the number of food establishments inspected by the single sanitary physician of the rayon served by the above sanitary-epidemiological station was less than 200, but by 1971 it had grown to 300. No more than 200,000 tons of toxic chemicals were produced annually in the USSR in the 1950's; 20 years later the output was in the millions of tons. Yet the station still has but a single sanitary physician with a few assistants. This officer works 6 days a week which, minus holidays, days off, and leave, totals 283 days a year. He spends 81 days attending a variety of conferences and meetings and 80 days filling out forms, making reports, etc. After 35 days for preliminary inspections and emergency work are subtracted, he has only 87 days left for his main work -- inspection and enforcement of sanitary laws and regulations. And of the 300 establishments for which he is responsible, 243 are on the periphery of the rayon in 40 inhabited localities situated in a radius of over 100 km. Since only 2 to 5 places can be checked a day,

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USSR

MUSAYELYAN, A. V., Gigiyena i Sanitariya, No 10, 1971, pp 103-104

each establishment on the periphery will receive barely one visit a year.
This obviously unsatisfactory state of affairs will not improve without the
provision of additional qualified personnel and reorganization of the duties
and modus operandi of the sanitary physician.

2/2

TITLE--LUMINESCENE ACCOMPANYING MECHANICAL DEFORMATION AND FAILURE OF
   POLYMERS -U-

AUTHOR-(05)-BUTYAGIN, P.YU., YEROFEYEV, V.S., MUSAYELYAN, I.N.,
   PATRIKEYEV, G.A., STRELETSKIY, A.N.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2), 290-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS

TOPIC TAGS--LUMINESCENE, MECHANICAL FAILURE, ELONGATION, POLYMER,
   POLYTETRAFLUOROETHYLENE, POLYETHYLENE TEREPHTHALATE, PLASTIC FILM,
   POLYETHYLENE, PROPYLENE, POLYVINYL CHLORIDE, NATURAL RUBBER,
   VULCANIZATE, POLYMETHYLMETHACRYLATE, THERMAL DEGRADATION, POLYMER
   DEGRADATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1224   STEP NO--UR/0459/70/012/002/0290/0299

CIRC ACCESSION NO--AP0116686
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0116686

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LUMINESCENE OCCURRING DURING
CONTRACTION, ELONGATION, AND FAILURE OF POLYMERS WAS STUDIED ON A SNK-7
IKHF APP. EQUIPPED WITH PHOTOMULTIPLIERS FEU-29 (LAMBDA SUBMAX EQUALS
400 PLUS OR MINUS 40 MMU), FEU-13 (LAMBDA SUBMAX EQUALS 410 PLUS OR
MINUS 10 MMU), AND FEU-22 (LAMBDA SUBMAX EQUALS 750 PLUS OR MINUS 100
MMU). A CROSS SECTIONAL DIAGRAM OF THE APP. AND ITS MODE OF OPERATION
ARE PRESENTED. THE MOST INTENSIVE LUMINESCENE DURING FAILURE WAS OBSD.
IN POLY (TETRAFLUOROETHYLENE) FP-4 (I) AND POLY(ETHYLENE TEREPHTHALATE)
(II) FILMS; THE LEAST LUMINESCENT POLYMERS WERE HIGH PRESSURE
POLYETHYLENE, ETHYLENE PROPYLENE COPOLYMER (III), ETHYLENE ALPHA
BUTYLENE COPLYMER, POLY(VINYL CHLORIDE), POLYPROPYLENE, AND NATURAL
RUBBER (IV) VULCANIZATES. FAILURE OR SUDDEN CONTRACTION IN I-IV FILMS
WAS ACCOMPANIED BY POST LUMINESCENE, (GREATER THAN OR EQUAL TO 15 MIN).
THE LUMINESCENE INTENSITY WAS LOW IN ALL CASES AND EXCEEDED THE
SENSITIVITY THRESHOLD OF THE PHOTOMULTIPLIERS ONLY BY A FACTOR OF 10
PRIME2-10 PRIME3. A HYPOTHESIS WAS ADVANCED TO ACCOUNT FOR THE
LUMINESCENCE. STUDY OF THERMAL LUNINESCENCE OF POWD. POLYMERS SUGGESTED
THAT LUMINESCENCE IN POLY (ME METHACRYLATE) AND POLYSTYRENE AT
270-330DEGREESK WAS DUE TO RECOMBINATION OF PEROXIDE RADICALS FORMED
DURING MECH. SCISSION OF MACROMOLS., WHEREAS INTENSIVE LUMINESCENCE
ABOVE 330DEGREESK WAS DUE TO OXIDATIVE THERMAL DEGRADATION INITIATED BY
DECOMPD. HYDROPEROXIDES.

Alkaloids

TSULIKYAN, T. A., MUSAYELYAN, L. A., and MNATSAKANYAN, V. A., Institute of Fine Organic Chemistry iment A. L. Mndzhoyan, Academy of Sciences Armenian SSR, Yerevan

"The Alkaloids of Veratrum lobelianum Bernh . "

Abstract: The alkaloids of the subterranean parts of Veratrum lobelianum Bernh. were extracted with chloroform on treatment of the dry, powdered plant material with 8% ammonia. The total alkaloid content of the sub-terranean parts was 1.5% at the end of the period of vegetation (end of Jul - Aug). The mixture of alkaloids was separated by chromatography on Al_2O_3, using $HCCl_3$-MeOH as an eluent. The mixture, which consisted of at least seven bases, contained the known alkaloids nervine and pseudonervine in amounts corresponding to 33 and 17%, respectively, of the total alkaloids In addition to these two principal alkaloids, small amounts of unknown bases with m. 260-2° and m. 286-9° were isolated. The leaves and stalks of the plants contained 0.5% alkaloids in May and only traces of them at the end of the period of vegetation.

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USSR

UDC: 621.376.4(088.8)

ZHENEVSKIY, Yu. P., MUSAYELYAN, S. A., NEVDYAYEV, L. M., and
PAVLOV, V. G.

"Second-Generation Device for Demodulating Signals with Pulse-Phase
Modulation"

Avt. sv. SSSR (Author's Certificate USSR) Class 21a^4, 42; 21a^1,
36/08, (H 03 d 3/24, H 03K 9/04), No. 275170, Application 12.07.68,
Publication 12.10.70 (from RZh-Radiotekhnika, No. 3, March 71,
Abstract No. 3D94P)

Translation: A device is proposed, which contains a sawtooth volt-
age oscillator connected to a signal source, a switching circuit
with a memory element controlling a source of synchronization, an
interpolator, a low-frequency filter, for example, a trigger, and
a delay line. To reduce the noise at the communication channel
output caused by the random lost operating pulses at the input of
the device, the synchronization source is connected to the switch-
ing circuit through a coincidence network connected through the
control input to the trigger, the switching input of which is di-
rectly connected to the signal source while the input of the
counter is connected through the delay line to the synchronization
source.
1/1

USSR   UDC: 621.396.4(088.8)

MATSKOV, A. A., MUSAYELYAN, S, A., DANIELYAN, S. A., LEBEDEV, V. F.

"A Modulation Device for a Radio Relay Station With Unilateral Phase-
-Pulse Modulation"

USSR Author's Certificate No 278777, filed 14 Jan 69, published 26 Nov 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D399 P)

Translation: A modulation device is proposed for a radio relay station
with unilateral phase-pulse modulation. The device contains a low-frequency
amplifier, envelope restitution circuit, comparator and output pulse shaper
connected in series, and also a sawtooth reference voltage generator con-
nected to the comparator. To reduce nonlinear distortions of the modulating
signal, connected to the input of the low-frequency amplifier is a series
circuit comprised of a buffer amplifier and a compensation signal shaper
which may be made in the form of a modulating signal detector whose output
is connected through a coupling circuit to one of the comparator outputs.
V. P.

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USSR   UDC   621.373.53(088.8)

MUSAYELYAN, S. A., MAZURENKO, I. V., SHARYAPOV, Sh. A., PAVLOV, V. G.

"A Relaxation Oscillator"

USSR Author's Certificate No 259141, Filed 7 Aug 68, Published 28 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10G170 P)

Translation: A relaxation oscillator is proposed with pulse bridge elements con-nected in the collector-base circuits of the transistors in the oscillator. To pruvide conditions for easy self-excitation of the oscillator and improve operational stability, a dynamic control circuit is connected between one of the poles of the power supply and the common bus. This control circuit is made up of a resistor and capacitor connected in series, the common point being connected to the bases of the transistors in the oscillator through auxiliary resistors, and to the collectors of these same transistors through semiconductor diodes. To improve the operational reliability of the oscillator on low frequencies, the additional resistors are connected to the capacitor thorugh an emitter follower.

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USSR

M

UDC 621.376.55(088.8)

VENEDIKTOV, M. D., ZHENEVSKIY, YU. P., NEVDYAYEV, L. M., MUSAYELYAN, S. A.

"Nonsynchronous Demodulator"

USSR Author's Certificate No 252411, Filed 27 Feb 68, Published 12 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D34P)

Translation: This author's certificate introduces a demodulator which contains a forbidden circuit, an inertialess pulse expander, a low-frequency filter and a forbidden circuit control circuit. In order to improve the noiseproofness of the device, a two-channel device is connected between the output of the pulse expander and the input of the low-frequency filter. This two-channel device contains a series-connected differentiating circuit for the leading edge, a delay line and an OR circuit in the first channel and a differentiating circuit for the trailing edge, a delay line and a forbidden circuit is connected to the second input of the OR circuit, and the second input, to the output of the expander.

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USSR

UDC: 621.396.43

MUSAYELYAN, S. A., VENEDIKTOV, M. D., GOL'DBERG, B. S., ZHENEVSKIY, Yu. P.

"A PPM Signal Demodulator for Radio Relay Communications Lines"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, 1970, Author's Certificate No 265979, filed 30 May 68, p 47

Abstract: This author's certificate introduces a PPM signal demodulator for radio relay communications lines. The unit contains a gating channel interval stage and a PPM to PAM converter which are both connected to a reference signal source. The converter incorporates a shaper, keyer and slave sawtooth voltage oscillator with controlled steepness of the linear segment. As a distinguishing feature of the patent, the resistance to interference and operational reliability of the demodulator are improved by connecting the shaper and the slave sawtooth voltage oscillator to the output of the gating channel interval stage through series-connected circuits consisting respectively of a network for differentiating the trailing edge of a pulse and a delay element, and of a network for differentiating the leading edge of a pulse, a slave relaxation oscillator and a key.

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USSR

UDC: 621.396.43

MATSKOV, A. A., MUSAYELYAN, S. A., DANIELYAN, S. A., LEBEDEV, V. F.

"A Modulation Device for a Radio Relay Station With Unilateral Pulse Position Modulation"

Abstract: This Author's Certificate introduces a modulation device for a radio relay station with unilateral pulse position modulation. The unit contains a low frequency amplifier, envelope restoration circuit, comparator and output pulse shaper all connected in series, and also a reference sawtooth voltage oscillator connected to the comparator. As a distinguishing feature of the patent, nonlinear distortions of the modulating signal are reduced by connecting a series circuit at the output of the low frequency amplifier consisting of a buffer amplifier and a compensation signal shaper which may be made in the form of a modulating signal detector whose output is connected in addition to one of the comparator outputs through a coupling circuit.

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USSR   UDC: 621.376.4:621.376.55

ZHENEVSKIY, Yu. P., MUSAYELYAN, S. A., NEVDYAYEV, L. M., PAVLOV, V. G.

"A Device for Demodulating Signals With Pulse Position Modulation of the Second Kind"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22,
1970, Soviet Patent No 275170, Class 21, filed 12 Jul 68, p 42

Abstract: This Author's Certificate introduces a device for demodulating signals
with pulse position modulation of the second kind. The unit contains a sawtooth
voltage generator connected to the signal source, a keying circuit with memory ele-
ment controlled by a synchronization source, an interpolator, e. g. a low-frequency
filter, a flip-flop, and a delay line. As a distinguishing feature of the patent,
the device is designed for reduction of noises at the output of the communication
channel caused by random disappearances of working pulses at the input of the device.
The synchronization source is connected to the keying circuit through a coincidence
gate whose control input is connected to the flip-flop, the trigger input of the
flip-flop being connected directly to the signal source. The counting input of the
flip-flop is connected through the delay line to the synchronization source.

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USSR   UDC   621.376.6

MATSKOV, A. A., MUSAYELYAN, S. A., LEBEDEV, V. F., DANIELYAN, S. A.

"A Modulation Device for a Radio Relay Station"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288062, class 21, filed 4 Aug 69, published 3 Dec 70, p 61

Translation: This Author's Certificate introduces a modulation device for a radio relay station with unilateral pulse-time modulation. The device contains a series hook-up comprised of a low-frequency module, an envelope restitution circuit and a comparator connected to an output pulse shaper and a sawtooth voltage generator which includes a charging capacitor and a master current stage. As a distinguishing feature of the patent, mutual interference between channels is eliminated by making the comparator with two transistors of the same conductivity type. The emitters of these transistors are tied together and connected to the charging capacitor, and the collectors are also tied together and connected to the output pulse shaper, e. g. through a trigger winding. The base of one of the transistors is connected to the output of the envelope restitution circuit, while the base of the other is connected to a blanking voltage source, e. g. through a resistive divider.
1/1

USSR

UDC 621.382.233

ARIFOV, A.A., MUSAYEV, S. A., SAFAROV, A.

"Current-Voltage Characteristic Of Silicon Tunnel Diodes With Large Current Density"

[Nauchn. tr.]Tashkent. politekhn. in-t ([Scientific Works] Tashkent Polytechnical Institute), 1970, No 65, pp 312-315 (from RZh--Elektronika i yeye primeneniya, No 11, November 1970, Abstract No 11B91)

Translation: The second ascending branch was studied of the current-voltage characteristic of tunnel p-n junctions of n-Si and p-Si. Abnormally large values were observed of the pre-exponential factor I_{02} and the coefficient of β_2 in the index of the exponent of the current-voltage characteristic. As the base material, n-Si doped with As (7 . 10^{19} cm^{-3}), P (8.5 x 10^{19} cm^{-3}), and p-Si, doped with B (1.5 x 10^{20} cm^{-3}) were used. The emitter alloys were Al plus B, Sn plus P, Au plus As, Cu plus In plus B. On the basis of the dependence of the parameters of the exponents on the minimum current density, it was concluded that the excess current determines the character of the dependence of the total current on the voltage. 1 ref. I.B.

1/1

USSR

MUSAYEV, E. M.

UDC: 519.1

"On a Problem of Reliability Theory"

Translation: The system consists of N main and m reserve elements which are in an unloaded state. A study is made of the distribution of time to first failure of such a system assuming that recovery takes place by an exponential law, and failures occur according to Poisson law with low periodic failure rate.

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1/2   020   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--EFFECT OF THE ANTIOXIDANT ADDITIVE IONOL ON THE PROPERTIES OF
   TRANSFORMER OILS -U-
AUTHOR-(03)-KULIYEV, R.SH., MAMEDOV, N.SH., MUSAYEV, G.T.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(4), 52-3

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, ELECTRIC PROPERTY, TRANSFORMER
   OIL, DIELECTRIC PERMEABILITY, ANTIOXIDANT ADDITIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/2088   STEP NO--UR/0065/70/015/004/0052/0053

CIRC ACCESSION NO--AP0127461
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0127461
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDN. OF 0.1-0.3PERCENT IONOL
(2,6,DI,TERT,BUTYL,4,METHYLPHENOL) TO FRESHLY REFINED TRANSFORMER OIL
PRODUCED NO ALTERATION OF ITS ELEC. PHYS. PROPERTIES. AFTER OXIDN. OF
THE OIL WITH ADDITIVE, ITS ELEC. RESISTIVITY INCREASED, BUT ITS DIELEC.
PENETRABILITY CHANGED LITTLE. IONOL HAD ALSO LITTLE INFLUENCE ON THE
DECREASE IN THE AMT. OF OXIDN. PRODUCTS AFTER OXIDN.   FACILITY:
INKHP, BAKU, USSR.

UNCLASSIFIED

USSR

AKHUND-ZADE, M. Yu., SHABANBEKOV, Z. M., and MUSAYEV, Kh. I.

"Determining the Stresses in Characteristic Cross Sections of Non-Circular Reinforced Concrete Cylindrical Shells"

Abstract: This article concerns itself with thin-walled structures widely used in shipbuilding, aviation, and rocketry, in addition to other forms of modern building techniques. Its function is to cast additional light on the physics underlying the phenomena occurring in the loading of reinforced concrete shell coverings, and just touch on some problems in architecture, economics and production. As is usual in the design of such shells, it is assumed that Hooke's law governs the uniform material of the shell all along the height of the cross section. The authors consider the

1/2

USSR

AKHUND-ZADE, M. YU., et al, _Izvestiya Akademii Nauk Azerbaydzhan-
skoy SSR--Seriya fizikotekhnicheskikh i matematicheskikh nauk_,
1970, No 3, pp 138-143

computation of the shells' sturdiness by starting from one form of
the equation of V. V. Novozhilov for the equilibrium of nonslanting
cylindrical shells, by which they determine the bending moments,
normal forces, and displacements. To show how the formulas they
derive are used, they take a practical example.

2/2

USSR   UDC: 517.53

MUSAYEV, K. M.

"Some Extremal Characteristics of Generalized Analytic Functions"

·Moscow, Doklady Akademii Nauk SSSR, vol 203, No 2, 1972, pp 289-292

Abstract: The author investigates the class of analytic functions $U_{p,2}(A,B,G)$: i.e., the class of regular solutions of the equation

$$\partial_{\bar{z}}w(z) + A(z)w(z) + B(z)\overline{w(z)},$$

where $A(z)$ and $B(z) \in L_{p,2}(E)$, E is a finite plane, and $\partial_{\bar{z}}w(z) = \frac{1}{2}(\partial w/\partial x + i\partial w/\partial y)$. Assuming that G is a finite region with the rectifiable boundary Γ, the generalized analytic function $w(z)$ of the class $U_{p,2}(A,B,G)$ is defined as belonging to the class $E_{\delta}(A,B,G)$, with $\delta > 0$, if there exists a sequence $\{\Gamma_n\}$ of rectifiable curves, converging to Γ, such that

$$\int_{\Gamma_n} |w(z)|^{\delta} |dz| \leq c < +\infty, \quad n = 1, 2, \dots,$$

1/2

USSR   UDC: 517.53

MUSAYEV, K. M., <u>Doklady Akademii nauk SSSR</u>, vol 203, No 2, 1972,
pp 289-292

where c is independent of n. The author is connected with the
Institute of Mathematics and Mechanics, Azerbaijan Academy of
Sciences, at Baku.

USSR

UDC 621.396.6-181.48

MUSAYEV, L. P.

"Algorithm for Calculating the Mismatch of Microcircuits when Assembling Radio Equipment"

V sb. Metody mat. i fiz. modelir. i optimiz. parametrov, radioelektron. apparatury. No 1 (Methods of Mathematical and Physical Simulation and Optimization of the Parameters of Radio Electronic Equipment. No 1 — collection of works), Moscow, 1972, pp 125-127 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7V248)

Translation: The possibility of simplifying the procedure for calculating the mismatch when assembling radio equipment by using the so-called junction graph compiled by the schematic of the developed device is demonstrated. The basis for the mathematical description of the junction graph is the numerical expressions for the interrelations of the branches of the component circuits on one hand and the graph loops, on the other. The algorithm is constructed for calculating the graph on a digital computer. There are 2 illustrations.

1/1

USSR

UDC 621.396.6-181.5

MUSAYEV, L. P., GUSEV, V. P.

"Synthesis of Submodules Comprising Hybrid Film Units and Integrated Circuits"

Sb. nauch. soobshch. Radiotekhn. fak. Dagestan. un-t (Collected Scientific Reports. Radio Engineering Department. Dagestan University), 1970, No 1, pp 120-123 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10V184)

Translation: Submodules are designed by means of a planning experiment permitting derivation of a mathematical model of the submodule which relates the output parameters of the functional units comprising the submodules. Possible versions of connecting the functional units and the mathematical equations defining the basic characteristics of the submodule are presented. When designing a submodule with multipole functional units, it is necessary to achieve a minimum number of functional units and also the minimum number of links from input to output, which improves the reliability. There are 3 illustrations and a 2-entry bibliography.

1/1

USSR   UDC 575.21

MUSAYEV, M. A., ABDULLAYEVA, T. Yu., and YEGIAZAROV, V. V., Azerbaydzhan
Scientific Research Institute of Vegetable Growing, Baku

"Mutagenic Effect of Laser Radiation on Tomatoes"

Abstract: Tomato shoots with roots less than 4 mm long were exposed to a
LG-55 gas laser (continuous-operation type, working frequency 6328 Å) for 5,
15, 30, and 45 min. Preparations were stained with luminescent dyes to study
the cytogenetic effects of irradiation. The number of chromosome aberrations
increased steadily with the length of exposure. The sharpest rise occurred
after the 15 min exposure. This was followed by a "plateau," possibly
because of a protective mechanism. Some of the seeds from the exposed plants
were planted at the same time as control seeds to compare the biological and
morphological characteristics of the shoots. Even before reaching the trans-
plant stage, the experimental plants lagged significantly in growth and
development regardless of the dose used. Experimental plants also exhibited
abnormally shaped flowers, slower rate of setting fruit, and so forth.

1/1

MUSAYEV, M. M.

Abstracts of Scientific Articles

Spectrophotometric Study of Chromospheric Flare

The solar flare discussed in this article was situated on the northwestern limb of the disk in a developing sunspot group. The group had a complex structure and the penumbras of all spots seemingly merged into one. The group was very flare-active. The spectrum of this flare, observed at the Shemakhinskaya Astrophysical Observatory on 8 July 1966, was studied using the ASP-20 diffraction spectrograph with the ATsU-5 horizontal solar telescope in the third order of the spectrum with a dispersion of 0.73 A/mm. The flare was at the very edge of a spot penumbra. The ratio of intensity in the continuous spectrum of the penumbra at the point where the flare was formed to the intensity of the adjoining undisturbed photosphere was 0.61. Determination of the neces- sary flare parameters on the basis of the investigated lines was difficult because the flare was over the penumbra. (The lines H and K Ca II, H$_\beta$, H$_\epsilon$ and H$_8$ of hydrogen and the line $\lambda 4077$ for Sr II were processed.) It was impossible to subtract the residual intensities of the undisturbed contour from the flare contour, thereby obtaining the "pure" emission contour. However, for finding a number of flare parameters it was possi- ble to make joint use of the H and K ca II lines, a method proposed by V. A. Krat (Izv. GAO, No 178, 19, 1965), which does not require that the intensity of the undisturbed contour be known.

(Abstract: "Spectrophotometric Study of the Chromospheric Flare of 8 July 1966," by M. M. Musayev, Shemakhinskaya Astrophysical Observatory; Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR, Seriya Fiziko-Tekh- nicheskikh i Matematicheskikh Nauk, No 1, 1971, pp 73-78)

JPRS 54577

- 4 -

USSR   UDC: 681.3

BEKMURATOV, T. F., MUSAYEV, M. M., NASYROV, M. Sh., SHAMSIYEV, T. G.

"An Analog-Digital Computer System Based on the 'Dnepr' Computer and the MN-7"

Translation: The paper describes an analog-digital computer system based on the "Dnepr" digital computer and two MN-7 analog computers. The structure used in the hybrid system enables automation of the processes of control and setting up structural schemes on the analog computers. Authors' abstract.

1/1

1/2   024   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--EFFECT OF TEMPERATURE ON THE ADSORPTION AND DESORPTION OF OIL
  SOLUBLE SURFACE ACTIVE AGENTS IN QUARTZ SAND UNDER DYNAMIC CONDITIONS
AUTHOR-(04)-MUSAYEV, R.A., TAIROV, N.D., KHALILOV, E.G., ABUTALYBOVA, R.N.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEFT. KHOZ. 1970, (1), 28-9

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TEMPERATURE DEPENDENCE, ADSORPTION, DESORPTION, SURFACE ACTIVE
  AGENT, SAND, KEROSENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0139   STEP NO--UR/0487/70/000/001/0028/0029

CIRC ACCESSION NO--AP0129395
                    UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0129395   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NONIONIC AND CATIONIC COMPOS. OF UNSTATED STRUCTURE WERE STUDIED IN KEROSINE SOLN. FROM 25 TO 100DEGREES. THE LATTER TYPE WAS MORE READILY ADSORBED AND LESS READILY DESORBED. THE DEGREE OF ADSORPTION OF THE COMPOS. SHOWED A VARYING RESPONSE TO INCREASE IN TEMP.; DESORPTION INCREASED. IN THE PRESENCE O H SUB2 O, ADSORPTION DECREASED AND DESORPTION INCREASED.

UNCLASSIFIED

272   010
UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--COMPARATIVE STUDY OF THE FORMATION OF FREE AMINO ACIDS BY LOCAL
THERMOPHILIC, LACTIC ACID BACTERIA -U-
AUTHOR-(03)-OGAY, D.K., MUSAEYV, SH.M., MADRAKHIMOV, YU.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(1), 103-6

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, LACTIC ACID, BACTERIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/0359   STEP NO--UR/0411/70/006/001/0103/0106

CIRC ACCESSION NO--AP0100846
UNCLASSIFIED

CIRC ACCESSION NO--AP0100846

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. WERE PERFORMED ON FREE AMINO ACIDS ACCUMULATION IN CASEIN MEDIUM BY THE THERMOPHILIC LACTIC ACID BACTERIA LACT(OBACILLUS) THERMOPHILUS 172, L. BULGARICUS 176, AND STR(EPTOCOCCUS) THERMOPHILUS 6 AND 132. INCUBATION WAS AT 45DEGREES FOR 24, 48, 96, AND 168 HR. ALL INVESTIGATED BACTERIA ACCUMULATED 16 FREE AMINO ACIDS. THE AMT. AND PROPORTION OF THESE AMINO ACIDS VARIED, DEPENDING ON THE TIME OF CULTIVATION, SPECIES, AND STRAIN OF THE MICROORGANISM.

UNCLASSIFIED

UNCLASSIFIED

TITLE--ACOUSTIC PROPERTIES OF PYRIDINE CHLOROFORM SOLUTIONS -U-

PROCESSING DATE--23OCT70

AUTHOR-(03)-MUSAYEV, T.N., LANSHINA, L.V., KHABIBULLAYEV, P.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK UZB. SSR, SER. FIZ.-MAT. NAUK 1970, 14(1), 83-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--PYRIDINE, CHLOROFORM, ULTRASONIC FREQUENCY, ACOUSTIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1876

STEP NO--UR/0166/70/014/001/0083/0084

CIRC ACCESSION NO--AP0123664

UNCLASSIFIED

CIRC ACCESSION NO--AP0123664
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE PROPERTIES WERE STUDIED
BY AN IMPULSE METHOD AT 20DEGREES. AT THE ULTRASOUND FREQUENCY OF 39
MHZ, THE ABSORPTION COEFFS. ALPHA PER FUNCTION PRIME2 OF PURE C SUB5 H
SUB5 N AND CHCL SUB3 ARE 4.10 TIMES 10 PRIME NEGATIVE15 AND 4.78 TIMES
10 PRIME NEGATIVE15 SEC PRIME2 PER CM, RESP.; THE (ALPHA PER FUNCTION
PRIME2) TIMES 10 PRIME15 VALUES OF MIXTS. WITH THE C SUB5 H SUB5 N MOLE
FRACTION CHI OF 0.18, 0.32, 0.56, AND 0.78 ARE 3.86, 3.69, 3.42, AND
3.80 SEC PRIME2 PER CM, RESP. THE MIN. ON THE ALPHA PER FUNCTION PRIME2
VS. CHI CURVE BECOMES LESS PRONOUNCED ON INCREASING THE ULTRASOUND
FREQUENCY FROM 39 TO 1800 MHZ AND THE CURVE IS MONOTONIC WITH HYPERSOUND
OF THE FREQUENCY OF (3-5) TIMES 10 PRIME9 HZ. THE EXPTL. DISPERSION OF
THE HYPERSOUND VELOCITY IN C SUB5 H SUB5 N-CHCL SUB3 MIXTS. IS LOWER
THAN THE THEORETICAL ONE, SUPPOSEDLY BECAUSE PROCESSES OF THE VIBRATION
AND STRUCTURAL RELAXATIONS PROCEED SIMULTANEOUSLY.   FACILITY:
MOSK. GOSUNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2   009   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--ACRYLOYLCYTISINE -U-

AUTHOR-(04)-MUSAYEV, U.N., MIRKHIDOYATOV, M.N., TILLAYEV, R.S., USMANOV,
   KH.U.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,394
REFERENCE--OTKRYTIYA, IZOBRET.; PROM. OBRAZTSY, TOVARNYE ZNAKI NR 1970,
DATE PUBLISHED--03MAR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALKALOID, CHEMICAL PATENT, ACRYLIC ACID, ACID CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1854   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132119
                    UNCLASSIFIED

2/2   009   UNCLASSIFIED   PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0132119
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACRYLOYLCYTISINE IS PREPD. BY
  TREATING CYTISINE WITH THE ACID CHLORIDE OF ACRYLIC ACID IN THE PRESENCE
  OF SODA IN AN ORG. SOLVENT, E.G. CHLOROFORM, AT 65-70DEGREES.

UNCLASSIFIED

MUSEYBOV, M.A.

geography

"Geographers Hold Congress"

Baku, Bakinskiy Rabochiy, 22 May 70, p 2

Translation: The Congress of the republic's geographic society began its work on 20 Kreates in the Azerbaydzhan Academy of Sciences.

Hundreds of members of the society -- scientists, teachers of higher and secondary educational institutions, and others -- gathered in the hall.

Academician M. A. Kashkay, secretary of the Azerbaydzhan Academy of Sciences, opened the congress.

Later, reports were heard from G. A. Aliyev, director of the Institute of Geography and Association of the republic's Academy of Sciences, entitled "Protecting Nature and the Rational Use of Resources"; Prof G. B. Aliyev, head of the Chair of Economic Geography of Foreign Countries of Azerbaydzhan State University, entitled "The Problem of the Economic Geography of the Azerbaydzhan SSR", Doctor of Geographic Sciences M. A. Muraybov, head of the Chair of Physical Geography of Azerbaydzhan State University, entitled "The Problem of the Physical Geography and the Geomorphology of the Azerbaydzhan SSR", and G. A. Kasharyan, professor at the Institute of the National Economy imeni D. Bunistrade, entitled "The Development of Cartography in the Azerbaydzhan SSR."

The group of scientists who participated in the compilation of the atlas of the Azerbaydzhan SSR were presented certificates of the USSR Geographic Society.

The work of the congress will last four days.

Radar

USSR   UDC: 621.396.961

KAGAN, V. G., MUSHAT, T. S., GOLDOBIN, V. I.

"Informational Evaluation of Radiotechnical Systems in Accounting for Probabilistic Characteristics"

Translation: The authors introduce the concept of informativeness for evaluating the correspondence between the assumed and true coordinates of the target in a radar detection and tracking system. An informativeness formula is given in terms of the probability of detecting a signal against a background of noise, the probability of a false alarm, the probability of determining the target range with a given accuracy, and the probability of determining the angular coordinates with a given accuracy. In view of the complexity of the resultant expressions, simplifications must be made with the use of approximations or an appropriate computational algorithm. Bibliography of four titles. A. M.

1/1

1/2   012   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--USE OF A FACTOR PLANNING METHOD FOR THE STUDY AND OPTIMIZATION OF A
   CATALYTIC PROCESS -U-
AUTHOR-(05)-BLANDIN, YU.V., KALININA, E.V., KUDRYAVTSEV, E.M., MUSHENKO,
   D.V., PLOTITSINA, L.V.
COUNTRY OF INFO--USSR

SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(3), 42-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYDROGENATION, FATTY ACID, ALCOHOL, CHEMICAL PLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1487   STEP NO--UR/0065/70/015/003/0042/0045

CIRC ACCESSION NO--AP0112481
                            UNCLASSIFIED

CIRC ACCESSION NC--AP0112481

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE METHOD WAS APPLIED TO THE
DIRECT HYDROGENATION OF SYNTHETIC FATTY ACIDS TO ALCS., BY USING THE
FEED SPACE VELOCITY, BOTTOM REACTOR TEMP., MOLE RATIO OF FEED TO H, AND
CONTENT OF FATTY ACIDS ABOVE C SUB16 IN THE FRACTION AS VARIABLES.   THE
OPTIMIZATION CRITERION WAS THE HIGHER PRODUCTIVITY OF THE PLANT, WHICH
WAS 0.175 HR PRIME NEGATIVE1, 246DEGREES, AND RATIO 1:50, RESP.   THE
PRODUCTIVITY WAS THUS INCREASED BY 35PERCENT OVER THAT OBTAINED UNDER
CONDITIONS SUGGESTED BY THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE FOR
PETROCHEMISTRY (0.13 HR PRIME NEGATIVE1).

UNCLASSIFIED

MUSHENKO   G.I.

Acc. Nr.: _AN0104123_

Ref. Code: _UR9003_

TITLE--   ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE
              PRIZES, U.S.S.R.

NEWSPAPER--   IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

ABSTRACT--   NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN
NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE
INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. AL.PEROVICH,
V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUPFER,
L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, I. M. VEDENEYEV,
S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOFAN
JET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO
SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED
WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV,
M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO,
P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO,
L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE
MINISTRY OF THE AVIATION INDUSTRY.

1/2

Reel/Frame
19870555

Acc. Nr.: AN0104123

A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES, /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUS,KO AND *ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATENS*, BY A. I. KIR,YANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALIMPIYEV, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPU-TATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE, BY YU. V. GERASIMOV, O. M. CHEKHOMOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLATOUST METALLURGICAL PLANT.

2/2

Reel/Frame
19870556

KZ

USSR   M

MUSHILOV, E. S., PYN'KO, V. G., SUKHOVSKIY, A. A.

"Automatic Rotating Magnetometer for Measurement of Small Moments"

Abstract: A simple automatic magnetometer with electromagnetic compensa-
tion of the measured torque is described. The sensitivity of the device is
no worse than 10^{-4} dyn/cm. The device is suitable for measurement of the
magnetic parameters of thin magnetic films.

1/1

USSR

UDC: 550.834

POLSHKOV, M. K., MUSHIN, I. A., SHEKHTMAN, G. A., POTAPOV, O. A., All-Union
Scientific Research Institute of Geophysical Methods of Prospecting

"A Method of Processing Seismic Data"

Translation: This Author's Certificate introduces: 1. A method of pro-
cessing seismic data based on the effect of the change in intensity of a
seismic recording when elastic oscillations are registered in media with
different acoustic rigidities. As a distinguishing feature of the patent,
the procedure is designed for improved precision in locating boundaries
which separate media with different acoustic rigidities. Reproduced seismic
recordings obtained by some such means as vertical seismic profiling at each
point of the investigated medium along the direction which intersects the
boundaries to be determined are integrated over a certain time interval
after conversion to quadratic form, and the integral values are presented

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USSR

POLSHKOV, M. K. et al., USSR Author's Certificate No 329492

in the form of a depth curve. The presence of geological boundaries is
then determined from changes in the curve. 2. A modification of this method
distinguished by the fact that the integral values are obtained from seismic
recordings converted to unipolar form.

2/2

USSR   UDC 543.422.4:542.957:547.357.4:546.821'131:547.558.1:547.315.1

BONDARENKO, G. N., KHAR'KOVA, Ye. M., MUSHINA, Ye. A., TETERINA, M. P., and
KRENTSEL', B. A., Institute of Petrochemical Synthesis Imeni A. V. Topchiyev,
Academy of Sciences USSR

"IR Spectra of the Reaction Products of Bis-π-allylnickel Bromide With
Titanium Tetrachloride, Triphenylphosphine, and Allene"

Abstract: The IR spectra were studied of the reaction products of bis-π-
allylnickel bromide with $TiCl_4$ and triphenylphosphine. It was proposed
that there occurs a $\pi \rightarrow \sigma$ isomerization in π-allyl-nickel complex. The
π-allyl structure is retained in the reaction of bis-π-allylnickel bromide
with allene. During allene polymerization the activity of the complexes
decreases in the order $(\pi\text{-}C_3H_5NiI)_2 > (\pi\text{-}C_3H_5NiBr)_2 > (\pi\text{-}C_4H_7Cl)_2$.

1/1

USSR   UDC 615.322:633.75:547.943).012.8

MUSHINSKAYA, S. KH., SHOSTENKO, YU. V., VYSOTSKAYA, YE. S., and BOZHKO, N. G.,
Khar'kov Scientific Chemical-Pharmaceutical Research Institute

"The use of an Anion Exchange Resin in Isolation of Codeine and Morphine From
Poppy Pods"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 12, Dec 72, pp 34-37

Abstract: After preliminary testing it was established that the best sorption
properties towards morphine were exhibited by the strongly basic anion exchange
resin AV-17 in the hydroxyl form with 2% divinylbenzene. Using this material,
alcoholic ammonia extracts of poppy pods were passed through the column.
Morphine, phenolic alkaloids and acid resins were bound to the resin while
codeine, nonphenolic alkaloids and basic resins were eluted from the column.
After this separation, routine isolation and purification of morphine and
codeine were carried out.

1/1

USSR

PYATNITSKIY, L. N., KOROBKIN, V. V., MUSHINSKIY, A. A., KHAUSTOVICH, G. P.,
State Scientific Research Institute of Power Engineering imeni G. M.
Krzhizhanovskiy, Moscow

"Use of the Method of Scattering to Determine the Parameters of a Low-
-Temperature Plasma"

Abstract: The paper outlines the difficulties which have stood in the
way of application of the scattering method to the study of low-temperature
plasmas. The principal obstacle is the difficulty of registering the electron
densities and scattering spectrum at low temperatures. It is assumed that
limiting conditions are reached when the intensity of the illumination becomes
equal to the average intensity of the electron component at a distance of half
the width of the electron component from the central line. The authors dis-
cuss the results of measurements of the parameters of electrons in a plasma
with an electron density of the order of 10^{15}/cc, and they valuate the lower
relative limit of such measurements. The plasma source was a tungsten-
electrode carbon-arc discharge at atmospheric pressure. The source of the

1/2

USSR

PYATNITSKIY, L. N., et al., Doklady AN SSSR, Vol 200, No 3, 1971 pp 571-574

radiation probe was a ruby laser. The emission pulse had a duration of 50 ns and an energy of about 1 J. The scattering spectrum was registered from a region with a volume of about 0.01 mm^3. The scattered light was observed at angles of 45 and 90°. The results of the experiments show that there is a real possibility of using the method of scattering to study a low-temperature plasma down to electron densities of the order of 10^{12}/cc. Two figures, one table, bibliography of twelve titles.

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USSR   UDC 621.315.592

GRAMATSKIY, V. I., KARAMAN, M. I., MUSHINSKIY, V. P.

"Optical Absorption of Gallium Monotelluride"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 550-552

Abstract: Results are presented from a detailed investigation of the absorp-
tion edge by measuring the transmission from which the width of the forbidden
band (E_g), the binding energy of the excitons (G) and other parameters of GaTe
are determined. The temperature dependence of the exciton band n = 1 was also
investigated. The absorption spectra of GaTe and the isoabsorption lines are
presented. The plotted data show that the absorption coefficient in the long
wave region of the edge of the band (n = 1) is satisfactorily described by the
exponential function

$$ K = K_0 \exp\left[-\frac{\sigma(h\nu_0 - h\nu)}{kT} \right], $$

where K_0 and $h\nu_0$ are constants which are equal to $8.7 \cdot 10^9$ cm^{-1} and 1.837 elec-
tron volts respectively, σ is a dimensionless parameter characterizing the
slope of the straight line lg K. The isoabsorption curves for various values
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GRAMATSKIY, V. I., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 550-552

of K from the long wave segment of the band indicate good convergence at the point $h\nu_0$. The parameter σ_0 is related to the exciton-phonon interaction constant g by the expression $\sigma_0 = 2g^{-1}/3$, from which the magnitude of the exciton-phonon coupling is 0.27. This indicates the weak nature of the exciton-phonon interaction in gallium telluride.

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USSR

ANDRONIK, I. YA., MUSHINSKIY, V. P.

"Obtaining and Investigating Certain Optical Properties of $In_2S_{3x}Se_{3(1-x)}$
Single Crystals"

Translation: The optical absorption and reflection spectra in the range 1-5 ev
were investigated in samples of $In_2S_{3x}Se_{3(1-x)}$ $(0 \le x \le 1)$ produced by chemical
transport reactions at 700°C. The absorption curves measured at 300°K are
shifted toward higher energies with an increase in x, and their analysis shows
that the boundary of the basic absorption is formed by direct and indirect
resolutions of the optical transitions. The energy of direct and indirect
transitions is given as a function of the crystal composition. Characteristic
of reflection curves are two maxima in the region 4.3 and 5.4 ev, respectively.

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USSR

ANDRONIK, I. YA., MUSHINSKIY, V. P., Nekotor. vopr. khimii i fiz. poluprovod-
nikov slozhn. sostava, Uzhgorod, 1970, pp 201-204

In crystals with x = 0.8-1.0 ev there is observed an additional maximum in the
region 3.05 ev, the intensity of which drops with an increase in the concentra-
tion of In_2Se_3. The reflection maximum in the absorption band is caused by
vertical optical transitions at critical points of the Brillouin zone. The
reflection spectra in the infrared region contain an extreme minimum caused by
plasma resonance reflection. A. Ya. O.

UDC 621.315.59:537.312.5

USSR

KARAVAN, M.I., MUSHINSKIY, V.P.

"Investigation Of The Photoconductivity Of Single Crystals Of The System GaSe--GaTe"

Tr. po fiz. poluprovodnikov. Kishinev. un-t (Works On Semiconductor Physics. Kishinev University), 1969, No 2, pp 102-107 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B233)

Translation: The photoelectric properties were investigated on single crystals of $GaSe_xTe_{1-x}$ at 77° and 290° K. The spectral and lux-ampere characteristics were measured. The lifetime of holes was determined by curves of the relaxation photoconductivity. The temperature coefficient of the change of the forbidden band was also determined. 6 ill. 5 ref. N.L.

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TITLE--PHOTOMAGNETIC EFFECT IN GALLIUM SELENIDE -U-

AUTHOR-(02)-KARAMAN, M.I., MUSHINSKIY, V.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(5), 1002-4

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  PHOTOCONDUCTIVITY

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CIRC ACCESSION NO--AP0136339
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2/2   024

CIRC ACCESSION NO--AP0136339

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOTOMAGNETIC EFFECT (PME) AND THE PHOTOCOND. WERE STUDIED OF P-GASE SINGLE CRYSTALS (N EQUALS 2.6 TIMES 10 PRIME14 CM PRIME NEGATIVE3) PREPD. BY THE BRIDGMAN-STOCKBERGER METHOD. THE APPLIED MAGNETIC FIELD WAS SMALLER THAN 10 PRIME4 OE, SO THAT UH-C SMALLER THAN 1. THE SPECTRAL REGION OF PME LIES BEYOND THE EDGE OF THE PRINCIPAL ABSORPTION BAND OF GASE. THE SPECTRAL D DEPENDENCE OF PHOTOCOND. SHOWS A MAX. AT 610 MU, IMPLYING THAT THE RATE OF SURFACE RECOMBINATION IS NOT NEGLIGIBLE. THE SPECTRAL DEPENDENCE OF PME DECREASES UNIFORMLY TOWARDS THE LONGER WAVE BAND. THE DIFFUSION . LENGTH OF THE CARRIERS L EQUALS 6.8 TIMES 10 PRIME NEGATIVE5 CM IS EVALUATED FROM 1-I SUBPME VS. 1-K PLOT (I SUBPME IS INTENSITY OF PME; K IS ABSORPTION COEFF.). THE RATIO OF U SUBPME AT THE MAX. TO THAT AT THE PLATEAU WAS USED TO CALC. THE RATE OF SURFACE RECOMBINATION S EQUALS 2.5 TIMES 10 PRIME3 CM-SEC AND THE LIFETIME OF THE ELECTRONS 2.3 TIMES 10 PRIME NEGATIVE8 SEC.   FACILITY: KISHINEV, GOS, UNIV., KISHINEV, USSR.

1/2   036   UNCLASSIFIED   PROCESSING DATE --20.0.70
TITLE--EXCITATION AND PHOTOLUMINESCENCE SPECTRA OF GAS SUBX SE SUB1-X
   CRYSTALS -U-
AUTHOR-(02)-KARAMAN, M.I., MUSHINSKIY, V.P.

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